# VIRGINIA STANDARDS OF LEARNING TRAINING INITIATIVE
## CORE COMPETENCIES FOR TEACHERS

The Standards of Learning Training Initiative is intended to improve teacher competencies in the following areas:

- delivering instruction that effectively covers the core content knowledge and skills for mathematics, science, English, and history and the social sciences (see attached Core Content Expectations);

- interpreting the goals, structure, content strands, and topics as identified in the SOL teacher resource guides for mathematics, science, English, and history and the social sciences;

- interpreting SOL test data for instructional purposes;

- using effective instructional techniques and strategies that promote achievement for all students;

- using effective remedial techniques in mathematics, science, English, and history and the social sciences;

- identifying connections within and across disciplines that support student achievement of the SOL; and

- using instructional technology as a learning tool to help all students meet the mathematics, science, English, and history and social science SOL (see attached Core Content Expectations).

# Virginia Standards of Learning Training Initiative
## Core Content Expectations for Teachers

| Science | | |
|---|---|---|
| **Level** | **Standards of Learning Content** | **Instructional Technology** |
| *K - 5* | ***Science Skills and Experimental Design***<br>• Scientific Investigation, Reasoning, and Logic (K.1, 1.1, 2.1, 3.1, 4.1, 5.1)<br>***Applications of Key Science Content***<br>• Force, Motion, Energy, and Matter<br>• Life Processes and Living Systems<br>• Earth/Space Systems and Cycles | • Four-Function Calculator<br>• Simulation Software<br>• Application Software<br>• Computer-based Probes<br>• Internet Applications |
| *6 - 8* | ***Science Skills and Experimental Design***<br>• Scientific Investigation, Reasoning, and Logic (6.1, 6.2, LS.1, PS.1)<br>***Applications of Key Science Content***<br>• Force, Motion, Energy, and Matter<br>• Life Systems<br>• Ecosystems Systems<br>• Earth and Space Systems | • Scientific Calculator<br>• Simulation Software & CD-ROMs<br>• Scientific Probes/ Computer- and Calculator-based<br>• Image Processing Applications<br>• Digital Photography<br>• Technical Databases<br>• Internet Applications |
| *9 - 12* | ***Science Skills and Experimental Design***<br>• Scientific Investigation, Reasoning, and Logic (ES.1, ES.2, BIO.1, BIO.2 CH.1, PH.1, PH.2, PH.3)<br>***Applications of Key Science Content***<br>*Earth Science*<br>• Scientific Investigation<br>• Geology<br>• Plate Tectonics (Geologic processes evidenced in the provinces of Virginia)<br>• Meterology, Oceanography, and Groundwater<br>• Astronomy and Space Science<br>*Biology*<br>• Scientific Investigation<br>• Life at the Molecular and Cellular Level (Inheritance and protein synthesis)<br>• Life at the Systems and Organisms Level<br>• Interactions of Life Forms<br>*Chemistry*<br>• Scientific Investigation<br>• Atomic Structure and Periodic Relationships<br>• Nomenclature, Chemical Formulas, and Reactions<br>• Molar Relationship<br>• Phases of Matter and Kinetic Molecular Theory | • Scientific Calculator<br>• Simulation Software<br>• Data Base and Spread Sheets<br>• Scientific Probes/Graphing Calculator- and computer-based<br>• Image Processing Applications<br>• Digital Photography<br>• Technical Databases<br>• Internet Applications |

# Virginia Standards of Learning Training Initiative
## Core Content Expectations for Teachers

| Mathematics | | |
|---|---|---|
| **Level** | **Standards of Learning Content** | **Instructional Technology** |
| *K - 5* | • Use problem solving, mathematical communication, mathematical reasoning, and mathematical connections to develop mathematical knowledge and skills<br>• Number and Number Sense<br>• Computation and Estimation<br>• Geometry and Measurement<br>• Probability and Statistics<br>• Patterns, Functions, and Algebra | • Four-Function Calculator<br>• Instructional Software<br>• Software Applications<br>• Networking Systems<br>• Presentation Software/Hardware |
| *6 - 8* | • Use problem solving, mathematical communication, mathematical reasoning, and mathematical connections to develop mathematical knowledge and skills<br>• Number and Number Sense<br>• Computation and Estimation<br>• Geometry and Measurement<br>• Probability and Statistics<br>• Patterns, Functions, and Algebra | • Scientific Calculator<br>• Graphing Calculator (Gr. 6-8 optional)<br>• Instructional Software<br>• Software Applications<br>• Networking Systems<br>• Presentation Software/Hardware |
| *9 - 12* | • Use problem solving, mathematical communication, mathematical reasoning, and mathematical connections to develop mathematical knowledge and skills<br>*Algebra*<br>• Expressions and Operations<br>• Relations and Functions<br>• Equations and Inequalities<br>• Statistical Analysis<br>• Analytical Geometry<br>*Geometry*<br>• Lines and Angles<br>• Triangles and Logic<br>• Polygons and Circles<br>• Three-dimensional Figures<br>• Coordinate Relations, Transformations, and Vectors | • Graphing Calculators/ Scientific Probeware<br>• Application Software (databases, spreadsheets, computer graphing utilities)<br>• Multimedia Instructional Programs<br>• Presentation Software/ Hardware<br>• Internet Applications |

**Virginia Standards of Learning Training Initiative**
**Core Content Expectations for Teachers**

| History and the Social Sciences | | |
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| **Level** | **Standards of Learning Content** | **Instructional Technology** |
| *K - 5* | ***History and Social Science Skills***<br>• Direction, location, and distance<br>• Sequencing events<br>• Information processing<br>• Reasoning<br>• Historical analysis<br>***Applications of Key History Content***<br>• *History* (Virginia and United States history; ancient civilizations; American historical documents)<br>• *Geography* (Human and physical geography (Virginia and United States); man-made and natural environments)<br>• *Economics* (Natural and human resources; consumers and producers; market economy; taxation and government services)<br>• *Civics* (Rights and responsibilities of American citizenship; direct v. representative democracy; branches of government) | • Instructional Software<br>• Application Software<br>• Internet Applications<br>• Presentation Software/Hardware |

| History and the Social Sciences | | |
|---|---|---|
| **Level** | **Standards of Learning Content** | **Instructional Technology** |
| *6 - 8* | ***History and Social Science Skills***<br>• Direction, location, and distance<br>• Sequencing events<br>• Information processing<br>• Reasoning<br>• Historical analysis<br>***Applications of Key History Content***<br>• *History- United States (First Contact to 1877)* (Colonial Period; American Revolution and establishment of U.S. government; settlement and expansion; Civil War and Reconstruction)<br>• *History- United States (1877 to the Present)* (United States and World Affairs (1898-1930); wars (World War I and II, Korea, Vietnam, the Middle East); Civil Rights Movement; Cold War<br>• *Geography* (Regions of the United States; effects of human events on physical environment; effects of physical environment on human events)<br>• *Economics* (Historical development of money, savings, and credit; impact of technology on the United States and world economies; Federal Reserve System)<br>• *Civics* (American historical documents; rights and responsibilities of citizenship; functions of local, state and national governments; American political system; Virginia and United States constitutions) | • Instructional Software<br>• Application Software<br>• Internet Applications<br>• Presentation Software/Hardware |

| History and the Social Sciences | | |
|---|---|---|
| **Level** | **Standards of Learning Content** | **Instructional Technology** |
| *9 - 12* | ***History and Social Science Skills***<br>• Direction, location, and distance<br>• Sequencing events<br>• Information processing<br>• Reasoning<br>• Historical analysis<br>***Applications of Key History Content***<br>• ***World History to 1000 AD/World Geography*** (Ancient civilizations; Greece and<br>   Rome; Middle East, Russia, and Medieval Europe; Asia, Africa, and the Americas)<br>• ***World History: 1000 AD to the Present/World Geography*** (Late Medieval Europe:<br>   1000 AD through the Reformation; Age of Discovery; The Ages of<br>   Enlightenment, Absolutism, and Reason; Industrial Revolution; 20th century world<br>   conflicts)<br>• ***World Geography*** (Regional, physical, and cultural geography; population and<br>   economic geography)<br>• ***United States History***<br>  - ***First Contact to 1789*** (Age of Discovery, colonization, revolution, and the<br>     Constitutional Era*)*<br>  - ***1789 - 1877*** (Establishing the national government, territorial expansion, Civil<br>     War and Reconstruction)<br>  - ***1877 - 1945*** (Immigration, Industrial Revolution, World Wars I and II)<br>  - ***1945 - to the Present*** (U.S. foreign policy since 1945, civil rights)<br>• ***Geography*** (Relationships between geography and U.S. historical development)<br>• ***Economics*** (Industrial Revolution, the Great Depression) | • Instructional Software<br>• Application Software<br>• Internet Applications<br>• Presentation Software/Hardware |

## Virginia Standards of Learning Training Initiative
## Core Content Expectations for Teachers

| English | | |
|---|---|---|
| **Level** | **Standards of Learning Content** | **Instructional Technology** |
| *K -3* | • Develop oral language skills<br>   • Phonological Awareness<br>   • Oral Communication Skills<br>   • Small Group Learning Activities<br>• Use word analysis strategies (phonetic/structural)<br>   • Phonetic Principles<br>   • Language Structure<br>• Understand a variety of printed materials/resource materials<br>   • Fluency<br>   • Vocabulary Development<br>   • Comprehension<br>• Understand elements of literature<br>   • Comprehension<br>   • Types of Texts<br>      • Narrative<br>      • Expository<br>      • Information<br>• Plan, compose, and revise paragraphs, stories, letters, and reports<br>   • Process Writing and Assessment<br>   • Word Processing Technology<br>• Edit for grammar, capitalization, punctuation, and spelling<br>• Locate and use information from a variety of resources<br>   • Print Reference Materials<br>   • Computer Reference Materials | • Instructional Software<br>• Presentation Software/Hardware<br>• Internet Applications<br>• Application Software (word processin |

| English | | |
|---|---|---|
| **Level** | **Standards of Learning Content** | **Instructional Technology** |
| *4 - 8* | • Develop oral language skills<br>  • Interpersonal Communication Skills<br>  • Small-Group Interaction<br>  • Formal Presentations<br>• Use word analysis strategies (phonetic/structural)<br>  • Phonetic Principles<br>  • Language Structure<br>  • Sentence Structure<br>• Understand a variety of printed materials/resource materials<br>  • Fluency<br>  • Vocabulary development<br>  • Comprehension<br>  • Narrative<br>  • Expository<br>  • Informational/Technical<br>• Understand elements of literature<br>  • Comprehension<br>  • Multiple Genre<br>• Plan, compose, and revise paragraphs, stories, letters, and reports<br>  • Process Writing and Assessment<br>  • Word Processing Technology<br>• Edit for grammar, capitalization, punctuation, and spelling<br>• Locate and use information from a variety of resources<br>  • Print Reference Materials<br>  • Computer Reference Materials<br>  • Research Process | • Instructional Software<br>• Presentation Software/Hardware<br>• Internet Applications<br>• Application Software (word processing and databases) |

| English | | |
|---|---|---|
| **Level** | **Standards of Learning Content** | **Instructional Technology** |
| *9 - 12* | • Understand a variety of printed materials<br>  • Reading Comprehension<br>  • Technical Reading<br>• Understand the elements of literature<br>  • Reading Comprehension<br>  • Multiple Genre<br>• Locate and use information from a variety of resource materials<br>  • Technology<br>  • A Research Process<br>• Plan, compose, and revise in a variety of forms for a variety of purposes<br>  • Process Writing and Assessment<br>  • Technical Writing<br>• Edit for correct use of language, capitalization, punctuation, and spelling<br>  • Process Writing and Assessment<br>  • Technical Writing<br>• Develop oral language skills<br>  • Interpersonal Communication Skills<br>  • Small-Group Interaction<br>  • Formal Public Speaking<br>  • Critiquing Presentations | • Instructional Software<br>• Presentation Software/Hardware<br>• Internet Applications<br>• Application Software  (databases and grammar and spelling checkers) |